

Prof. Dr. Bernard Haasdonk

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Born on April 12, 1976 in Bocholt (Germany)



Scientific Career

- Since 2014 W3-Professor for "Computational Mathematics" at the Institute of Applied Analysis and Numerical Simulation and Member of the Cluster of Excellence for Simulation Technology (SimTech), University of Stuttgart, Germany
- 2009 - 2014 Junior Professor for "Hierarchical Solution Strategies for Non-linear Problems" at the Institute of Applied Analysis and Numerical Simulation and the Cluster of Excellence for Simulation Technology (SimTech), University of Stuttgart, Germany
- 2007-2009 Postdoctoral Researcher (Akademischer Rat) at the Institute of Applied and Computational Mathematics, University of Münster, Germany
- 2005-2007 Postdoctoral Researcher at the Institute of Applied Mathematics, University of Freiburg, Germany
- 2005 PhD in Computer Science, University of Freiburg, Germany
- 2000 - 2005 Research Assistant at the Institute of Pattern Recognition and Image Processing, University of Freiburg, Germany
- 1995 - 2000 Study of Mathematics and Computer Science at the University of Freiburg, Germany

Scholarships, Awards and Faculty Functions

- 2014 Nomination as German National Representative in the Management Committee of European COST Network EU-MORNET
- 2014 Appointment to a W3 Professorship "Numerische Mathematik", University of Stuttgart, accepted
- 2013 Teaching prize by the Fachschaft Mathematik, University of Stuttgart, "Beste Grundlagenvorlesung"
- 2013 Appointment to a W3 Professorship "Numerik", University of Siegen, declined
- 2012 Teaching prize by the Fachschaft Mathematik, University of Stuttgart, "Beste Vertiefungsvorlesung"

2007	DAAD-ARC fellowship for collaboration with the University of Manchester
2002, 2009	Best paper awards (IWFHR'02, GfKI'08)
2004	Prize in SAS Mining Challenge
2006	Acceptance in the Elitförderprogramm für Postdoktoranden der Landesstiftung Baden-Württemberg GmbH
2000	2000 Prize for the best graduation at the department of mathematics awarded by the Verband der Freunde der Universität Freiburg

Ten most important publications

* Publications jointly together with UoA-researchers involved within this IRTG

§ Publications jointly together with USTUTT-researchers involved within this IRTG

A) Published in publication outlets with scientific quality assurance and book publications:

1. Haasdonk, B.; Salomon, J.; Wohlmuth, B.: A Reduced Basis Method for Parametrized Variational Inequalities. SIAM Journal on Numerical Analysis, 50, p. 2656–2676, 2012.
2. Haasdonk, B.; Ohlberger, M.: Reduced Basis Method for Finite Volume Approximations of Parametrized Linear Evolution Equations. M2AN, Mathematical Modelling and Numerical Analysis, 42(2), p. 277–302, 2008.
3. Haasdonk, B.: Feature Space Interpretation of SVMs with Indefinite Kernels. IEEE Transactions on Pattern Analysis and Machine Intelligence, 27(4), p. 482–492, 2005
4. Haasdonk, B.; Ohlberger, M.; Rumpf, M.; Schmidt, K.G.: Multiresolution Visualization of Higher Order Adaptive Finite Element Simulations, Computing, 70(3), p. 181–204, 2003.
5. Haasdonk, B.; Kröner, D.; and Rohde, C.: Convergence of a Staggered Lax-Friedrichs Scheme for Nonlinear Conservation Laws on Unstructured Two-Dimensional Grids, Numerische Mathematik, 88(3), p. 459–484, 2001.
6. Maier, I.; Haasdonk, B.: A Dirichlet-Neumann reduced basis method for homogeneous domain decomposition problems. App. Num. Math., 78, p. 31-48, 2014.
7. Haasdonk, B.: Convergence rates of the POD-Greedy method. M2AN, Math. Model. Numer. Anal., 47, 859-873, 2013.
8. Drohmann, M.; Haasdonk, B.; Ohlberger, M.: Reduced basis approximation for nonlinear parametrized evolution equations based on empirical operator interpolation. SIAM J. Sci. Comp., 34(2), p. A937-A969, 2012.
9. Pekalska, E.; Haasdonk, B.: Kernel Discriminant Analysis with Positive Definite and Indefinite Kernels. IEEE Transactions on Pattern Analysis and Machine Intelligence, 31(6), p. 1017-1032, 2009.
10. Wirtz, D.; Sorensen, D.C.; Haasdonk, B.: A Posteriori Error Estimation for DEIM Reduced Nonlinear Dynamical Systems. SIAM J. Sci. Comput., 36(2), p. A311–A338, 2014.

B) Other publications

C) Patents

Supervised graduate students since graduation year 2011

No.	Last Name, First Name	Degree	Title of the dissertation	Duration of thesis
1	Drohmann, Martin	Dr. rer. nat.	Reduced Basis Model Reduction for Non-linear Evolution Equations	2009 - 2012
2	Jung, Nadine	Dr.-Ing.	Error Estimation for Model Reduction	2009 - 2012
3	Wieland, Bernhard	Dr. rer. nat.	RB Methods for Partial Differential Equations with Stochastic Influences	2009 - 2013
4	Wirtz, Daniel	Dr. rer. nat.	Model Reduction for Nonl. Systems: Kernel Methods and Error Estimation	2010 - 2013
5	Dihlmann, Markus	Dr. rer. nat.	Adaptive Reduced Basis Methods for Optimization and State Estimation of Evolution Problems	2009 - 2015
6	Kaulmann, Sven	Dr. rer. nat.	Efficient Numerical Methods for Multiscale Problems	2011 - 2015
7	Martini, Immanuel	Dr. rer. nat.	RB-Methods for Heterogeneous Domain Decomposition Problems	2011 -
8	Burkovska, Olena	Dr. rer. nat.	Reduced Basis Methods for Option Pricing and Calibration	2012 -
9	Schmidt, Andreas	Dr. rer. nat.	Optimal Feedback Control with Reduced Basis Methods	2014 -
10	Föll, Roman	Dr. rer. nat.	Data Assimilation by Kernel Methods	2016 -

Most important research grants since 2011

No.	Research Project	Funding Period	Name(s) of the principal investigator(s)	Funding source and reference number
1	RBEvol: Reduzierte Basis Methoden zur Modellreduktion für Nichtlineare Parametrisierte Evolutionsgleichungen	04/2009 - 03/2012	Ohlberger, M., Haasdonk, B.	DFG, OH 98/2-1 and OH 98/2-2
2	RBEvolOpt: Reduced Basis Methods of Higher Order Parametrized Evolution Problems and Application in Optimization	11/2009 - 05/2014	Haasdonk, B.	DFG, ExC 310/2 PN 6-10
3	RB Methoden für Heterogene Gebietszerlegung	08/2012 - 04/2015	Haasdonk, B.	Baden Württemberg Stiftung gGmbH, 7635.521 (11)/Haasdonk/1
4	MSRB-Verfahren für Zweiphasenströmung in Porösen Medien	07/2013 - 12/2014	Haasdonk, B.	Baden Württemberg Stiftung gGmbH, 7635.521 (12)/Haasdonk/1
5	Feedback Control of Parametric PDEs with RB-Surrogate Models	04/2014 - 03/2017	Haasdonk, B.	DFG, ExC 310/2 PN 3-5